

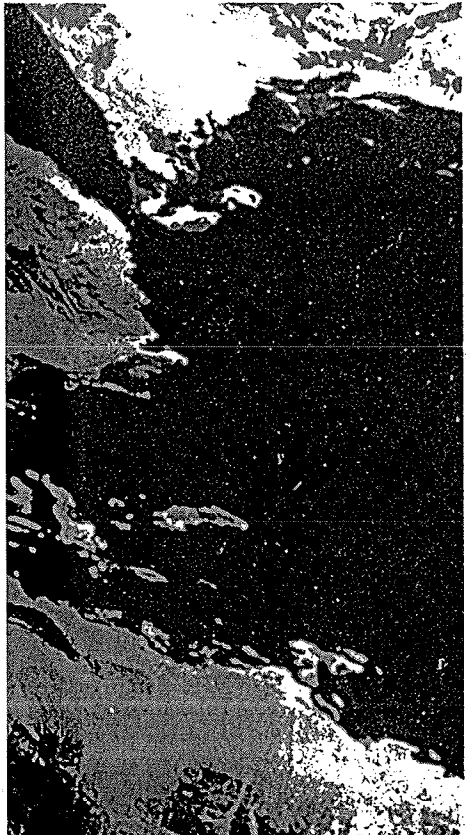
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McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition



Sybil P. Parker

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On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini spacecraft. (NASA)

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the radiation of radio waves; it includes benefits derived from radar and intercept services. { 'rād-ē-ō 'kaunt-ər,mezhr-ərz }

radio deception [COMMUN] The use of radio to deceive the enemy, as by sending false dispatches or using enemy call signs. { 'rād-ē-ō di'sep-shən }

radiodermatitis [MED] Degenerative changes in the skin following excessive exposure to ionizing radiation. Also known as radiation dermatitis. { 'rad-ē-ō,dər-mə'tid-əs }

radio detection [ENG] The detection of the presence of an object by radiolocation without precise determination of its position. { 'rād-ē-ō di'tek-shən }

radio detection and location [ENG] Use of an electronic system to detect, locate, and predict future positions of earth satellites. { 'rād-ē-ō di'tek-shən ən lō'kā-shən }

radio detection and ranging See radar. { 'rād-ē-ō di'tek-shən ən 'rānj-ŋ }

Radio Determination Satellite Services [COMMUN] A system which enables a user with a hand-held transceiver, communicating with a central ground station through satellite relays in stationary orbit, to determine his or her position to within several feet or a few meters. Abbreviated RDSS. { 'rād-ē-ō di,tər-mə'nā-shən 'sād-əl,īt,sər-vəs-əz }

radio direction finder [NAV] A radio aid to navigation that uses a rotatable loop or other highly directional antenna arrangement to determine the direction of arrival of a radio signal. Abbreviated RDF. Also known as direction finder. { 'rād-ē-ō di'rek-shən ,fīnd-ər }

radio direction-finder station [COMMUN] A land-based radio station equipped with special apparatus for determining the direction of radio signals transmitted by ships and other stations. { 'rād-ē-ō di'rek-shən ,fīnd-ər ,stā-shən }

radio direction finding [NAV] A procedure for determining the bearing at a receiving point of the source of a radio signal by observing the direction of arrival of the wave front. { 'rād-ē-ō di'rek-shən ,fīnd-ŋ }

radio Doppler [ENG] Direct determination of the radial component of the relative velocity of an object by an observed frequency change due to such velocity. { 'rād-ē-ō 'dāp-lər }

radio duct [GEOPHYS] An atmospheric layer, typically shallow and almost horizontal, in which radio waves propagate in an anomalous fashion; ducts occur when, due to sharp inversions of temperature or humidity, the vertical gradient of the radio index of refraction exceeds a critical value. { 'rād-ē-ō ,dakt }

radio echo See radar return. { 'rād-ē-ō ,ek-ō }

radio echo observation [ENG] A method of determining the distance of objects in the atmosphere or outer space, in which a radar pulse is directed at the object and the time that elapses from transmission of the pulse to reception of a reflected pulse is measured. { 'rād-ē-ō ,ek-ō ,āb-zər'vā-shən }

radioecology [ECOL] The interdisciplinary study of organisms, radionuclides, ionizing radiation, and the environment. { 'rād-ē-ō ,ē'kāl-ə-jē }

radioelectric meteorology See radio meteorology. { 'rād-ē-ō ,i'lek-trik ,mēd-ē-ō'rāl-ə-jē }

radio element [NUC PHYS] A radioactive isotope of an element, or a sample consisting of one or more radioactive isotopes of an element. { 'rād-ē-ō ,el-ə-mənt }

radio emission [ELECTROMAG] The emission of radio-frequency electromagnetic radiation by oscillating charges or currents. { 'rād-ē-ō i,mish-ən }

radio energy [ELECTROMAG] The energy carried by radio-frequency electromagnetic radiation. { 'rād-ē-ō ,en-ər-jē }

radio engineering [ENG] The field of engineering that deals with the generation, transmission, and reception of radio waves and with the design, manufacture, and testing of associated equipment. { 'rād-ē-ō ,en-jə'nir-ŋ }

radio facility chart See enroute chart. { 'rād-ē-ō fə'sil-əd-ē ,chärt }

radio-facsimile system [COMMUN] A facsimile system in which signals are transmitted by radio rather than by wire. { 'rād-ē-ō fak'sim-əl-ē ,sistəm }

radio fadeout [COMMUN] Increased absorption of radio waves passing through the lower layers of the ionosphere due to a sudden and abnormal increase in ionization in these regions; signals as receivers then fade out or disappear. Also known as fadeout. { 'rād-ē-ō 'fād,aut }

radio fan-marker beacon See fan-marker beacon. { 'rād-ē-ō 'fan ,mār-kər ,bē-kən }

radio field intensity [ELECTROMAG] Electric or magnetic field intensity at a given location associated with the passage of radio waves. { 'rād-ē-ō 'fēld in,tən-səd-ē }

radio field-to-noise ratio [ELECTROMAG] Ratio, at a given location, of the radio field intensity of the desired wave to the noise field intensity. { 'rād-ē-ō 'fēld tə 'nōiz ,rā-shō }

radio fix [COMMUN] Determination of the position of the source of radio signals by obtaining cross bearings on the transmitter with two or more radio direction finders in different locations, then computing the position by triangulation. [NAV]

1. Determination of the position of a vessel or aircraft equipped with direction-finding equipment by ascertaining the direction of radio signals received from two or more transmitting stations of known location and then computing the position by triangulation. 2. Determination of position of an aircraft in flight by identification of a radio beacon or by locating the intersection of two radio beams. { 'rād-ē-ō ,fiks }

radio fixing aid [NAV] Equipment making use of radio to assist in the determination of a geographical position. { 'rād-ē-ō 'fiks-ŋ ,ād }

radio frequency [ELECTROMAG] A frequency at which coherent electromagnetic radiation of energy is useful for communication purposes; roughly the range from 10 kilohertz to 100 gigahertz. Abbreviated rf. { 'rād-ē-ō ,frē-kwən-sē }

radio-frequency alternator [ELEC] A rotating-type alternator designed to produce high power at frequencies above power-line values but generally lower than 100,000 hertz; used chiefly for high-frequency heating. { 'rād-ē-ō ,frē-kwən-sē 'ōl-tə ,nād-ər }

radio-frequency amplifier [ELECTR] An amplifier that amplifies the high-frequency signals commonly used in radio communications. { 'rād-ē-ō ,frē-kwən-sē 'amp-lə ,fī-ər }

radio-frequency bandwidth [COMMUN] Band of frequencies comprising 99% of the total radiated power extended to include any discrete frequency on which the power is at least 0.25% of the total radiated power. { 'rād-ē-ō ,frē-kwən-sē 'band ,width }

radio-frequency cable [ELECTROMAG] A cable having electric conductors separated from each other by a continuous homogeneous dielectric or by touching or interlocking spacer beads; designed primarily to conduct radio-frequency energy with low losses. Also known as RG line. { 'rād-ē-ō ,frē-kwən-sē ,kā-bəl }

radio-frequency cavity preselector [ELECTROMAG] A tunable cavity resonator in an ultra-high-frequency circuit, which is similar in function to a tuned resonant circuit. { 'rād-ē-ō ,frē-kwən-sē 'kav-əd-ē ,prē'si'lek-tər }

radio-frequency choke [ELEC] A coil designed and used specifically to block the flow of radio-frequency current while passing lower frequencies or direct current. { 'rād-ē-ō ,frē-kwən-sē ,chök }

radio-frequency component [COMMUN] Portion of a signal or wave which consists only of the radio-frequency alternations, and not including its audio rate of change in amplitude frequency. { 'rād-ē-ō ,frē-kwən-sē kəm,pō'nənt }

radio-frequency current [ELEC] Alternating current having a frequency higher than 10,000 hertz. { 'rād-ē-ō ,frē-kwən-sē ,kərənt }

radio-frequency filter [ELECTR] An electric filter which enhances signals at certain radio frequencies or attenuates signals at undesired radio frequencies. { 'rād-ē-ō ,frē-kwən-sē ,fil-tər }

radio-frequency generator [ELECTR] A generator capable of supplying sufficient radio-frequency energy at the required frequency for induction or dielectric heating. { 'rād-ē-ō ,frē-kwən-sē ,jen-ə ,rād-ər }

radio-frequency head [ENG] Unit consisting of a radar transmitter and part of a radar receiver, the two contained in a package for ready removal and installation. { 'rād-ē-ō ,frē-kwən-sē 'hed }

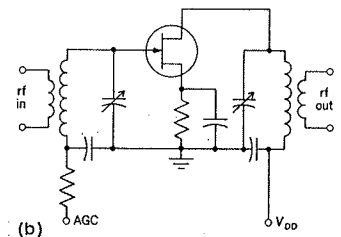
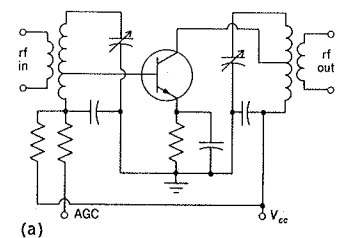
radio-frequency heating See electronic heating. { 'rād-ē-ō ,frē-kwən-sē 'hēd-ŋ }

radio-frequency interference [COMMUN] Interference from sources of energy outside a system or systems, as contrasted to electromagnetic interference generated inside systems. Abbreviated RFI. { 'rād-ē-ō ,frē-kwən-sē ,in-tər'fir-əns }

radio-frequency line See radio-frequency transmission line. { 'rād-ē-ō ,frē-kwən-sē ,līn }

radio-frequency measurement [ELECTR] The precise measurement of frequencies above the audible range by any of

RADIO-FREQUENCY AMPLIFIER



Typical radio-frequency amplifier circuits with (a) bipolar transistor and (b) field-effect transistor. AGC = automatic gain control; V_{CC} = collector supply voltage; V_{DD} = drain supply voltage.